



**PRESERVING OUR  
TRANSPORTATION  
INFRASTRUCTURE**



**2005 ANNUAL REPORT  
TRANSPORTATION ASSET  
MANAGEMENT COUNCIL**

**May 2006**

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## **PREFACE**

“The department and each local road agency shall keep accurate and uniform records on all road and bridge work performed and funds expended for the purposes of this section, according to the procedures developed by the council. Each local road agency and the department shall annually report to the council the mileage and condition of the road and bridge system under their jurisdiction and the receipts and disbursements of road and street funds in the manner prescribed by the council, which shall be consistent with any current accounting procedures. An annual report shall be prepared by the staff assigned to the council regarding the results of activities conducted during the preceding year and the expenditure of funds related to the processes and activities identified by the council. The report shall also include an overview of the activities identified for the succeeding year. The council shall submit this report to the state transportation commission, the legislature, and the transportation committees of the house and senate by May 2 of each year.”

Section (9) of Act 499 of the Public Acts of 2002

The Transportation Asset Management Council was appointed by the State Transportation Commission on September 26, 2002. It is the intent of the Council to analyze and report to the Legislature and State Transportation Commission on the current condition of the federal-aid eligible roads and bridges and the investments made to this system. In this way, you will be kept up-to-date on the overall condition of our roads and bridges; how we as road agencies are spending the public dollars you have entrusted to us; and the system needs for maintaining and preserving our roads and bridges.

**This report was approved by the Transportation Asset Management Council on April 5, 2006.**

## INTRODUCTION

This report is being submitted to the Michigan Legislature and the State Transportation Commission in accordance with the provisions of MCL 247.659a. The purpose of this report is to inform both bodies of the current condition of Michigan's federal-aid eligible public roads and bridges. This is the fourth report submitted by the Transportation Asset Management Council (Council).

Michigan law defines asset management as "an ongoing process of maintaining, upgrading, and operating physical assets cost-effectively, based on a continuous physical inventory and condition assessment." [MCL 247.659a(1)(a)] The mission of the Council is to recommend to the State Transportation Commission a statewide asset management strategy and the necessary procedures and analytical tools to implement such a strategy throughout Michigan. To that end the Council will expand the practice of asset management statewide to enhance the productivity of investing in Michigan's roads and bridges through coordination and collaboration among state and local transportation agencies by:

1. Surveying and reporting the condition of roads and bridges by functional classification for the state and regional planning areas.
2. Assessing completed and planned investments in roads and bridges by the various transportation agencies of the state.
3. Supporting the development of appropriate asset management tools and procedures.
4. Providing education and training on the benefits of developing road improvement programs through the use of asset management principles and procedures.

The expected outcome is an asset management process that is easily communicated and used and leads to a road network that is managed by function.

This report highlights the activities performed in 2005 that continue previous efforts aimed at the Council fulfilling its stated mission. It is important to recognize that while the Council makes progress in achieving our goals, we do so in a cooperative and coordinated manner. The progress that is reported comes only through the cooperation of the Michigan Department of Transportation, the county road commissions and cities and villages, assisted by the townships, counties, metropolitan and regional planning organizations.

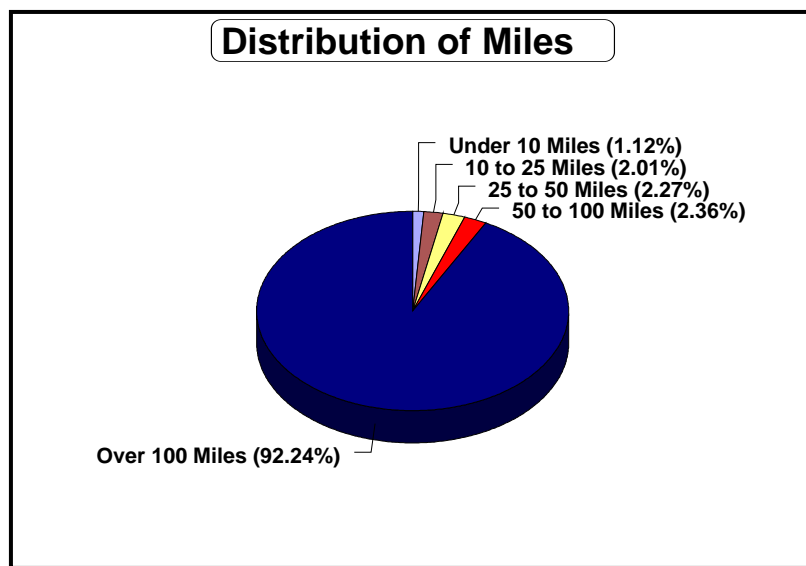
Working together in this cooperative fashion, we have begun the process of developing one methodology for collecting pavement condition data;

have collected three years of data; and have begun the analysis of that data. The analysis to date is a statement of the current condition of the

federal-aid eligible roads in Michigan. As we continue with data collection, the analysis will mature to not only provide the existing condition of these pavements, but also project current condition into the future and be able to assess various policy decisions on the future condition of Michigan's public roads.

### **Michigan's System is Unique**

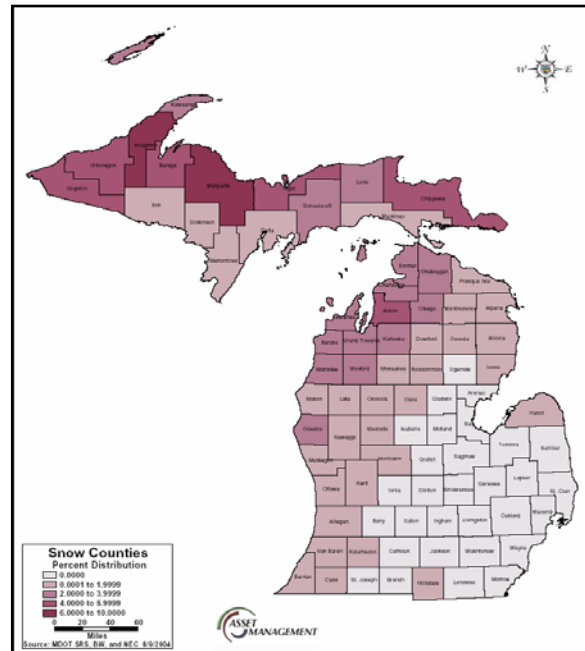
Michigan's network of roads and bridges is different than many other states and consequently presents us with different challenges. There are over 122,000 route miles dispersed amongst 617 agencies. This mileage, however, is not uniformly distributed. In fact, just 20% of the agencies have jurisdiction over 92% of the miles. Or 80% of the agencies are responsible for only 8% of the miles.



We are often considered an “urban” state by those who live outside of Michigan, but in truth 75% of our miles are located outside of urban areas. Michigan's geography necessitates long driving distances. For example, Detroit is farther from the City of Ironwood than it is from Philadelphia, St. Louis, Nashville, or Washington, D. C.



The fact that we are nearly surrounded by water presents unique weather conditions that most other Great Lakes states do not experience. While Michigan is a northern state and can have harsh winters, the snowfall is not uniform. Snowfalls are affected by the Great Lakes with counties along the western half of the state receiving heavier snowfalls. This creates very different maintenance problems and different rates of pavement deterioration depending upon where in the state your roads are located.



Freeze-thaw cycles can also be different in Michigan with this past winter being a perfect example. In many parts of the state the ground did not freeze as solidly as it often does. Rather it went through a number of freezing then thawing cycles. This is a perfect prescription for potholes and other pavement problems.

Michigan is the leader in the United States when it comes to trade with Canada. According to the USDOT Bureau of Transportation Statistics during 2002, 38% of all truck traffic coming into the U. S., entered through Michigan. (“Summary: State Transportation Profile,” US Department of Transportation, Bureau of Transportation Statistics, December 2003) Nearly \$120 billion in goods used Michigan’s transportation infrastructure. All other states bordering Canada only accounted for \$67 billion combined. These figures highlight not only the importance of Michigan to the nation’s economy but also emphasize the importance of our border security.

It is not a stretch to emphasize the importance of a well-maintained and improved transportation network to Michigan’s future quality of life. It is necessary to focus attention on effectively and efficiently managing and operating our transportation assets. Implementing the principles of asset management can assist in realizing that future.

## **Elements of Asset Management**

Traditionally, public sector management of roads and bridges has been tactical in nature, concentrating on the immediate and most severe problems. Asset management shifts that thinking to one that is more strategic in nature. Decisions are made with regard to the long-range condition of the entire system. This requires considering various investment strategies which will maintain the assets in good condition.

Asset management involves collecting physical inventory and managing current conditions based on strategic goals and sound investments. It is a continuous process enabling managers to evaluate various scenarios, determine trade-offs between different actions, and select the best method for achieving specified goals.

The fundamental elements of an asset management process include:

- Conduct periodic system condition inventories.
- Identify needs by forecasting system conditions based upon reliable rates of deterioration.
- Establish strategic goals and objectives, and performance measures.
- Evaluate investment scenarios based upon forecasted conditions and achievement of goals and objectives.
- Develop and implement a multi-year investment program.
- Routinely monitor the performance of system improvements.

Applying asset management practices can improve an agency's performance, cost-effectiveness, communication, accountability, and credibility.



## **COUNCIL ACTIVITIES**

MCL 247.659a(9) requires the Council to report on “the results of activities conducted during the preceding year and the expenditure of funds related to the processes and activities identified by the Council. The report shall also include an overview of the activities identified for the succeeding year.”

### **2005 Highlights**

The Council held 12 meetings during 2005. The highlights of their activities include:

- Conducted the third year of PASER ratings on Michigan’s federal-aid eligible roads.
- Initiated seven pilot projects for determining the time and cost to collect PASER ratings on local roads.
- Began development of a Michigan-specific asset management training program.
- Developed an Internet-based reporting tool for use by local road agencies.
- Selected RoadSoft for use in developing a statewide asset management strategy.

These highlights are explained in greater detail in other sections of this report.

### **Expenses**

During FY 2005 the Council had total expenditure of \$1,461,895 as reported in the Michigan Department of Transportation’s WEBFANCY financial tracking system. The majority of these expenditures were for activities associated with the collection of data and training as required by law.

### **2006 Activities**

The Council meets the first Wednesday of every month at the Michigan Aeronautics Building in Lansing. In addition to these meetings, the Council anticipates doing the following in 2006:

- Conducting the 4<sup>th</sup> year of PASER ratings on the federal-aid eligible roads.



- Hosting the first annual Michigan Conference on Asset Management to be held May 10<sup>th</sup> at the Kellogg Center on the campus of Michigan State University.
- Conducting a series of educational classes for local road agencies on the principles of asset management and pavement preservation.
- Developing future scenarios of pavement condition and analyzing investments for 2005 and reporting the results of this analysis to the Legislature by the end of the year.
- Revising the current work plan to extend through 2008.
- Educating local agencies on the various aspects of the Internet-based investment reporting tool.

## **CONDITION OF THE SYSTEM**

The collection of roadway condition data by the Council is a cooperative effort involving teams of county, city, state, and regional planning staff members. This effort was coordinated by the 21 regional planning and metropolitan planning organizations. The data collection process has helped to develop a new spirit of cooperation amongst agencies that once looked upon each other as competitors for scarce transportation funds. Follow-up reports to the Council indicated that the increased cooperation was one of the positive outcomes of the process.

### **PASER**

The Council uses the **Pavement Surface Evaluation and Rating System (PASER)** to rate the condition of the roads. PASER is a visual survey that rates the condition of various types of pavement distress on a scale of 1-10. The Council chose PASER because it is easy to collect; is of sufficient detail for statewide, network-level analyses; and is the method currently used by most road agencies in Michigan.

PASER uses 10 separate ratings with 1 being the worst and 10 being a newly constructed pavement. PASER measures the distress of a pavement's surface. And while it is a subjective method, it is based upon sound engineering principles. Individuals must take a training course before being allowed to rate the roads.

The Council groups the 10 ratings into three categories based upon the type of work that is required for each rating. These categories are routine maintenance, capital preventive maintenance, and structural improvements.

### **Routine Maintenance**

Routine maintenance is the day-to-day, regularly-scheduled activities to prevent water from seeping into the surface such as street sweeping, drainage clearing, gravel shoulder grading, and sealing cracks. PASER ratings 8, 9, and 10 are included in this category. This category also includes roads that are newly constructed or recently seal coated. They require little or no maintenance.

### **Capital Preventive Maintenance**

Capital preventive maintenance (CPM) is at the heart of asset management. It is the planned set of cost effective treatments to an existing roadway that retards further deterioration and maintains or

improves the functional condition of the system without significantly increasing the structural capacity. The purpose of CPM fixes is to protect the pavement structure; slow the rate of deterioration; and/or correct pavement surface deficiencies. PASER ratings 5, 6, and 7 are included in this category. Roads in this category still show good structural support but the surface is starting to deteriorate.

CPM is intended to address pavement problems **before** the structural integrity of the pavement has been severely impacted.



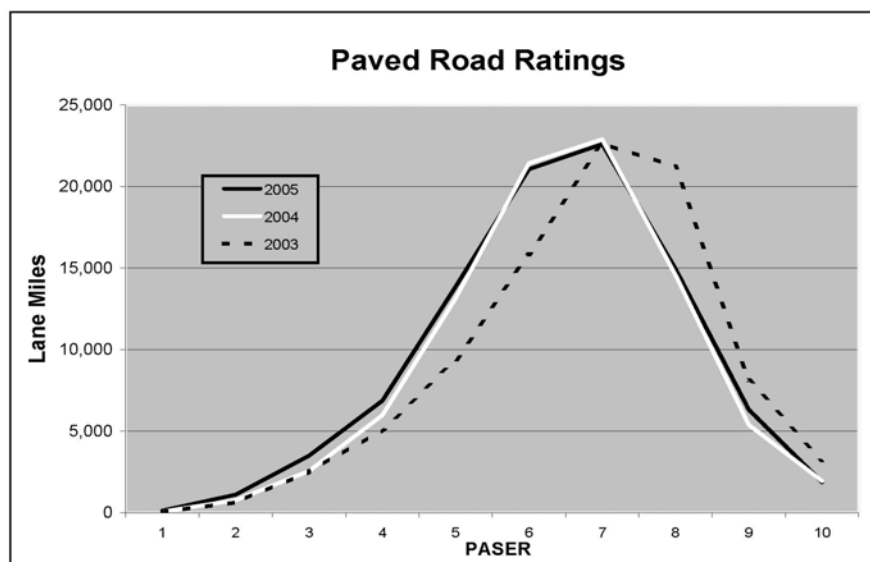
### **Structural Improvements**

Roads with a PASER rating of 1, 2, 3, or 4 are in need of some type of structural improvement such as resurfacing or major reconstruction. Rutting is beginning to take place. Alligator cracking is evident.



## **2005 Road and Bridge Condition**

The following graph shows the PASER ratings distribution for years 2003 through 2005. The large decrease from 2003 to 2004 was due to a number of anomalies in the data collection process and should not be viewed as a completely accurate description of the condition of the system. It was the first year of our collecting the information using a number of teams and there was less than satisfactory uniformity amongst the rating teams. This was corrected in 2004 by using more experienced raters and more extensive training.



The following chart shows the changes between 2004 and 2005. As can be seen over 17,000 lane miles were improved. However, over 32,000 lane miles declined. In other words, the overall condition of the federal-aid eligible roads in Michigan got worse between 2004 and 2005. The complete ratings for all paved roads by functional classification are contained in the Appendix.

	Lane Miles	Percent
Improved	17,002.6	18.8%
No Change	41,237.5	45.6%
Declined	32,247.1	35.6%
Total	90,487.2	100.0%

Bridges can be classified as “structurally deficient” or “functionally obsolete.” These classifications are determined by the National Bridge Inventory database (NBI). A **structurally deficient** bridge is one in which at least one of the major structural elements (deck, superstructure, or substructure) has a condition rating of poor or worse. A **functionally obsolete** bridge is one that is not structurally deficient, but has deficient roadway width, vertical clearance, waterway, road alignment or load capacity. Federal law requires that bridges be inspected at least once every two years. There are 9 different categories which determine whether a bridge is classified as “deficient.” Condition ratings are based on a 0-9 scale and assigned for the superstructure, the substructure, and the deck of each bridge. A condition of 4 or less classifies the bridge as being “deficient.”

**Structurally Deficient:** Generally, a bridge is structurally deficient if any major component is in “poor” condition. If any one or more of the following are true, then the bridge is structurally deficient.

- Deck Rating is less than 5
- Superstructure Rating is less than 5
- Substructure Rating is less than 5
- Culvert Rating is less than 5
- Structural Evaluation is less than 3



**Functionally Obsolete:** Generally, a bridge is functionally obsolete if it is NOT structurally deficient AND its clearances are significantly below current design standards for the volume of traffic being carried on or under the bridge. More specifically, if the bridge is NOT structurally deficient AND any one or more of the following are true, then the bridge is functionally obsolete.

- Structural Evaluation = 3
- Deck Geometry is less than 4
- Underclearance is less than 4 and there is another highway under the bridge

- Waterway Adequacy = 3
- Approach Roadway Alignment is less than 4
- Waterway Adequacy is less than 3

A bridge cannot be classified as both structurally deficient and functionally obsolete. If a bridge qualifies for both, then it is reported as structurally deficient. While functionally obsolete bridges represent needed improvements if the overall system is to achieve maximum operating efficiency, the bridges rated as structurally deficient require more immediate attention.

The 2005 bridge condition data was not available in time to be included in this report. It must first be submitted to the Federal Highway Administration before it can be released to the general public. The Council will report the bridge data in a supplemental report by the end of the year.

#### **Other Reports: The Road Information Program (TRIP)**

In February of 2006, The Road Information Program (TRIP) released their report “Making The Grade In Michigan: An Analysis of the Ability of Michigan’s Transportation System to Meet the State’s Need for Safe and Efficient Mobility.” While TRIP uses a different rating method than the Council and reports by centerline miles rather than lane miles, overall the report is consistent with the data collected by the Council.

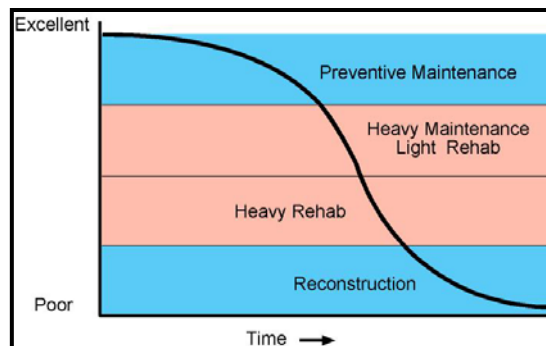
TRIP reported that in 2004, 14% of Michigan’s major roads were in poor shape. The Council’s numbers for 2004 were 12 % and for 2005 were 14% of the roads were in need of some type of major rehabilitation or reconstruction. Both reports show that over the last couple of years we have seen a decline in the overall condition of our roads and bridges.

The most significant aspect of the TRIP report as it relates to asset management is found on page 8 where they state: “The lifecycle of Michigan’s roads is greatly affected by the state’s ability to perform timely maintenance and upgrades to ensure that structures last as long as possible.” (“Making The Grade In Michigan: An Analysis of the Ability of Michigan’s Transportation System to Meet the State’s Need for Safe and Efficient Mobility,” TRIP, Washington, D. C., February 2006)

The heart of any asset management program is the ability to determine the right fix, in the right place, at the right time. This leads to an emphasis on capital preventive maintenance and a mix of fixes.

## **Capital Preventive Maintenance/Mix of Fixes**

Pavement deterioration of a newly constructed roadway typically starts slowly and accelerates with time. For the first few years, its condition is very good and little or no capital preventive treatment is needed. With time, the deterioration accelerates and if left unchecked will eventually reach a condition where major rehabilitation and reconstruction will be required.

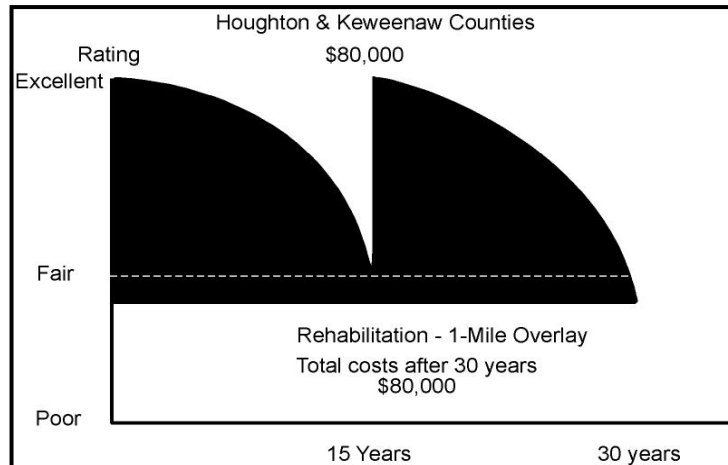


This figure illustrates the concept of a window of opportunity where certain types of treatments are feasible...the right fix...at the right time. The curved line shows how a pavement deteriorates over time. There are certain points along the curve where different types of work activities no longer are feasible to undertake. As can be seen there is a point on the curve where the road has deteriorated to the point where only reconstruction of the entire road is recommended.

By developing a program that emphasizes capital preventive maintenance an agency not only can postpone the need to reconstruct its roads it can also save money in the long run. The Michigan Local Technical Assistance Program (LTAP) analyzed three different work strategies for pavements in Houghton and Keweenaw Counties to illustrate the benefits of a mix of fixes.

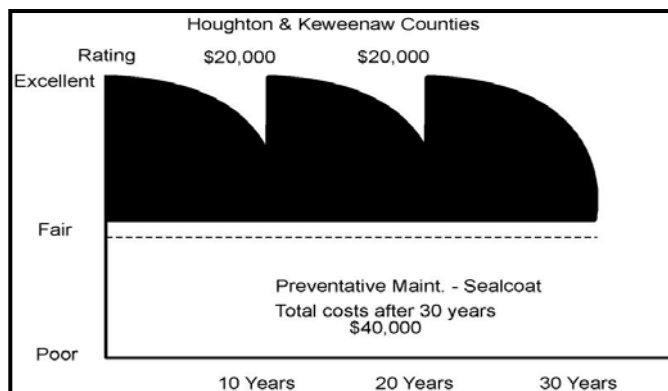
The first chart illustrates a strategy that consists of an overlay every 15 years. In this scenario, the pavement deteriorates for 15 years and then



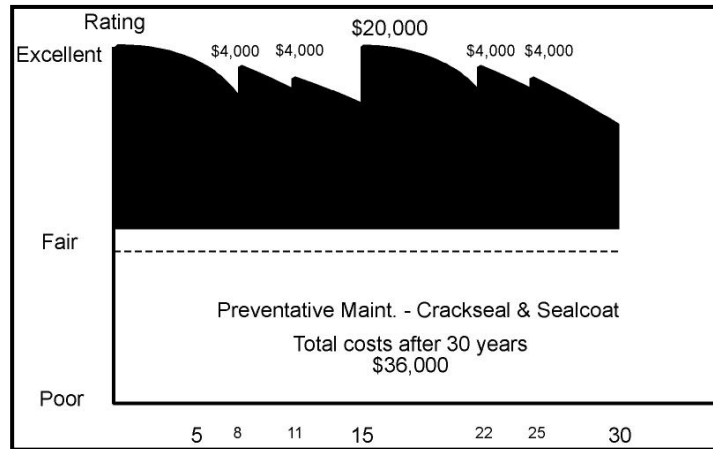


an overlay is performed. The overlay brings the condition back up to an excellent condition. The pavement is then left to deteriorate again for another 15 years. This strategy results in a total cost over 30 years of \$80,000. The condition after 30 years is slightly lower than the “fair” threshold.

The second chart shows the implications of using a sealcoat every 10 years. This approach results in a total cost of \$40,000 over 30 years. The resulting condition at the end of the 30 years is just slightly above the “fair” threshold.



The third scenario illustrates a strategy that consists of a mix of different fixes, in this case a combination of crack sealing and sealcoating. This approach results in a total cost of \$36,000 over 30 years. The resulting condition at the end of the period is halfway between the fair and excellent. This strategy results in the lowest overall cost and the highest overall condition.



In a capital preventive maintenance program the pavement would receive a preventive maintenance treatment while still in good condition and before the onset of serious damage. The treatment would restore the pavement almost to its original condition, from where it would resume its slower deterioration. At the right time, the same (or possibly a different) treatment would be applied. The cumulative effect would be to postpone...not prevent...reconstruction. However, studies have shown that for every dollar you invest in a capital preventive maintenance fix you can save anywhere from \$4 to \$6 later in more expensive structural improvements.

## **INVESTMENTS IN THE SYSTEM**

MCL 247.659a(9) requires the “department and each local road agency shall keep accurate and uniform records on all road and bridge work performed and the funds expended for the purposes of this section, according to the procedures developed by the Council. Each local road agency and the department shall annually report to the Council...the receipts and disbursements of road and street funds in the manner prescribed by the Council....” During 2005, the Council undertook two activities to implement this section of the law. The first effort was to define the categories of work that should be reported and to identify the types of work falls into each category. Second, the Council developed an Internet-based reporting process for agencies to use in submitting the required information.

### **Reporting Categories**

In order for there to be uniformity in reporting there must first be common reporting categories and an understanding of what work activities are included in the categories. The following categories were approved by the Council for use in reporting information in the Annual Report and the Multi-Year Program. These categories reflect the current definitions in state law. The types of work associated with each category reflect activities as currently identified in the city and county reporting forms and the MDOT work type codes.

**Routine Maintenance:** Routine maintenance includes actions performed on a regular or controllable basis or in response to uncontrollable events upon a roadway. Work activities or actions considered to be routine maintenance are those where the benefit or effective service life of the work does not last beyond the next fiscal year; the work would not significantly change the surface rating of the road; or the work would rarely require acquisition of right-of-way or site specific design. Examples of routine maintenance include repairing potholes, street sweeping, shoulder grading, and mowing.

**Capital Preventive Maintenance:** Capital preventive maintenance means a planned strategy of cost-effective treatments to an existing roadway system and its appurtenances that preserve assets by retarding deterioration and maintaining functional condition without increasing structural capacity. Work activities and actions that are included as a capital preventive maintenance activity are those that extend the life of the asset, but do not change the original design, function, or purpose of the asset. The primary purpose of the work is to repair the incremental effects of weather, age, and use; the useful service life or benefits extend

beyond the next fiscal year; and the work may restore some structural capacity of the road but it does not substantially increase the loading allowed. Examples of CPM work include thin overlays, slurry seals, and seal coating.

**Structural Improvement:** Structural improvement includes any activity that is undertaken to preserve or improve the structural integrity of an existing roadway. The structural improvement category includes those activities where the safety or structural elements of the road are improved to satisfy current design requirements. Structural improvement does not include new construction on a new location; a project that increases the capacity of a facility to accommodate that part of traffic having neither an origin nor destination within the local area; widening of a lane width or more; or adding turn lanes of more than ½ mile in length.

**Expand an Existing or New Asset:** This category includes the construction of a new roadway on a new location and/or the addition of lanes to increase the capacity of thru traffic. This category includes any new road that has been constructed that is not in the current inventory, or a new road constructed on a new alignment that replaces an existing facility.

### **Internet-based Reporting Process**

The Michigan Center for Geographic Information (CGI) has developed an Internet-based reporting tool to support the statewide transportation asset management process. The tool is designed for road agencies to submit information on the work they have done during 2005 and planned activities for 2006, 2007, and 2008.

The tool allows any road agency to securely login to the application to enter information within their respective jurisdiction. If an agency does not have Internet access, authority can be given to another entity (for example, a regional planning commission), to input and maintain the information for that jurisdiction.

The importance of this tool is that it gives all local and county road agencies with an Internet connection a way to begin collecting this information without much technical or financial commitment. This information is a critical part of the transportation asset management process. It will be used in conjunction with the PASER road rating information to better enable effective asset management at the jurisdiction and statewide levels.

The Council held thirteen training sessions around the state during the months of March and April to instruct local agencies on the use of the investment tool. Information on work that was done during 2005 must be reported by June 1, 2006. The Council will report the results of these investments to the Legislature and the State Transportation Commission by the end of 2006.

## **DEVELOPMENT OF TOOLS & PROCEDURES**

As part of their 2004-2006 Work Program, the Council identified Task III.B as follows: “Select a computer model capable of forecasting future conditions on Michigan’s roads...based upon surveyed conditions and reported improvements. The model must be capable of testing various scenarios for improvement type and levels of investment.” The responsibility for accomplishing this task was assigned to the Strategic Analysis Committee.

Throughout 2004 and 2005 the Strategic Analysis Committee and the Council conducted a number of meetings in which they developed a statement describing the strategic process; held a “vendor fair”; obtained the services of a pavement management consultant; and conducted a business requirements session.

### Statewide Strategy

In February of 2005, the Council approved a statement describing what the statewide strategy would consist of. The Council will acquire the technical capability and procedures to report a statewide asset management strategy to the State Transportation Commission. The purpose of the Council is to fulfill the requirements of Act 499 of 2002 and to assist Michigan’s transportation agencies in improving the roads and bridges under their jurisdiction.

The statewide strategy will encompass all public roads and bridges in the Michigan. It will be based upon periodic condition surveys, multi-year investment plans reported annually by Michigan’s transportation agencies, and regular reporting of capital preventive maintenance activities.

In developing the statewide strategy, the Council will analyze current and forecasted conditions by functional class for the statewide system as well as planning regions. The statewide strategy will identify condition trends resulting from the collection of each jurisdiction’s three-year investment plan. The statewide strategy may also report on potential trends resulting from alternative investment scenarios.

### Vendor Fair

During the months of October 2004 through March 2005, the Council reviewed 9 pavement management models. The models reviewed by the Council were from the following companies/agencies:

AgileAssets  
Deighton  
MDOT/RQFS

CarteGraph  
GBA Master Series  
MTU/RoadSoft

AssetManager  
Hansen  
Stantec

After viewing the demonstrations of the various models, the Council determined that all of the models were valuable and each offers an agency a range of capabilities that would assist them in an asset management process. However, the Council felt that it would be a better investment of their time to proceed with a more stringent review of the two models currently being developed with public funds, i. e., RoadSoft and RQFS. This decision was also in keeping with the Council's view of using existing resources wherever available and feasible.

The Strategic Analysis Committee set up a "technical" subcommittee to review the two models and identify any changes that might be required in the models for use by the Council. The technical subcommittee consisted of staff from MDOT, Michigan Tech, and the Center for Geographic Information. The technical subcommittee met several times with the Strategic Analysis Committee. A decision was reached that it was critical to hold a business requirements session before moving forward with a decision on a model.

#### Business Requirements Session

The Strategic Analysis Committee recommended that the Council, in cooperation with MTU and MDOT, proceed with a 'requirements development process' to further determine the feasibility, functionality, cost, and technical requirements of a strategic analysis model for public roads. This computer model would be developed for Michigan using the combined knowledge and experience that has been gained from using the RoadSoft and RQFS models.

The model's capabilities would include:

1. The Council needs to report on the condition of roads (PASER as the common distress measure) statewide and by planning region based upon completed and planned (3 year) improvements.
2. The Council also needs the capability of analyzing statewide and regional conditions based upon alternative investment scenarios factoring in different assumptions about the types of improvements (with same dollars) as well as varying levels of potential investment.

The Council envisions a computer model (with appropriate technical assistance) that is capable of the following:



- a. Assembles PASER condition ratings, with routines to convert other distress measures to PASER ratings for a network of over 120,000 centerline miles.
- b. The Council's Central Data Agency (CGI) will store data.
- c. Data model is flexible to incorporate potentially useful information including: improvement history, traffic volume, commercial traffic, and year of last improvement.
- d. Forecasts system conditions based upon regionally adjusted deterioration rates.
- e. Incorporates information on various improvement types (mix of fixes) and costs by region.
- f. Integrates with FRAMEWORK, the CGI investment-reporting program, and RoadSoft.
- g. Capable of accounting for improvements that can be reported by specific location or by amount of improvement (e.g., cost, miles, units, other)
- h. Generates reports that provide statewide and regional totals (conditions, costs, forecasts) according to multiple factors, including: total centerline and lane miles, functional classification categories, and surface types.

On August 31, 2005, the Strategic Analysis Committee met to engage in a "facilitated requirements session." The purpose of the meeting was to determine the business requirements for the computer model. Following the session a draft document was produced.

After reviewing the business requirements document at their October 5, 2005, meeting, and following the recommendation of the Strategic Analysis Committee, the Council made a preliminary decision to move forward with RoadSoft and instructed Council staff to begin meeting with staff from Michigan Tech. The purpose of the meeting was to go over issues identified in the requirements document and determine if RoadSoft could meet the requirements and if not, what would need to be done to the existing RoadSoft model. Following these discussions, the Council, in November 2005, approved using the RoadSoft model for developing their asset management strategy.

## **EDUCATION & TRAINING**

The Council understands that asset management is a new concept and a different way of looking at how we manage our transportation infrastructure. Consequently, they have decided that educating and training road agencies about asset management is a high priority. To this end the Council has designed a two-tiered approach. The first level is an introductory course and the second level has advanced courses on both asset management and pavement management. The education and training element of the Council is coordinated through the various metropolitan and regional planning organizations.

### **Introduction to Asset Management and Pavement Management**

The introductory course is offered by the Michigan Local Technical Assistance Program. It is a one-day course that focuses on the basic principles of asset management, benefits of a preventive maintenance approach, and the PASER rating system. The LTAP also provides regular courses on how to use RoadSoft and its application to managing an agency's program.

### **Advanced Pavement Preservation**

The National Center for Pavement Preservation (NCP) at Michigan State University offers a two-day course on pavement preservation. This two-day course gives an overview of the connection between asset management and preventive maintenance during the first day. The second day is a more extensive teaching on managing pavements and retarding deterioration. During 2005, the Council sponsored this course on three occasions. It is likely that there will be additional classes during 2006.



## **Advanced Asset Management**

Over the past several years, asset management training has been developed at the national level for state departments of transportation. However, very little guidance on implementing asset management has been provided for local agencies. In the Spring of 2004, the Council held a session to review the national course sponsored through the National Highway Institute. While many of the participants felt much of the information was good it really didn't speak to their local situations. Consequently, during 2005, the Council contracted with Cambridge Systematics, Inc., to develop a Michigan-based asset management course that was specifically focused on implementing asset management at the local level.

The contract calls for the development of a training guide, PowerPoint presentation and instructor's guide. The Council has reviewed the draft documents and is in the final stages of approving each.

The first class is scheduled to be held on May 11, 2006, in Lansing. Following that session, it is the intent of the Council to offer the class throughout the state during the remainder of the year. Metropolitan and regional planning organizations will be setting up the schedules for local road agencies in their respective areas.

## **APPENDIX**

## **TRANSPORTATION ASSET MANAGEMENT COUNCIL**

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	ROUTINE MAINTENANCE		PREVENTATIVE MAINTENANCE		STRUCTURAL IMPROVEMENT		TOTAL	
	Lane miles	Percent	Lane Miles	Percent	Lane Miles	Percent	Lane Miles	Percent
<b><u>Freeway</u></b>	<b>3,425.59</b>	<b>3.54%</b>	<b>5,977.80</b>	<b>6.17%</b>	<b>815.26</b>	<b>0.84%</b>	<b>10,218.65</b>	<b>10.55%</b>
Urban	1,576.53	1.63%	3,684.77	3.80%	525.64	0.54%	5,786.94	5.97%
Rural	1,849.06	1.91%	2,293.03	2.37%	289.62	0.30%	4,431.71	4.58%
<b><u>Non-Freeway</u></b>	<b>9,694.20</b>	<b>10.01%</b>	<b>23,822.61</b>	<b>24.60%</b>	<b>3,910.44</b>	<b>4.04%</b>	<b>37,427.25</b>	<b>38.64%</b>
Urban	4,629.86	4.78%	14,973.01	15.46%	2,708.41	2.80%	22,311.28	23.03%
Rural	5,064.34	5.23%	8,849.60	9.14%	1,202.03	1.24%	15,115.97	15.61%
<b><u>Arterials</u></b>	<b>13,119.79</b>	<b>13.55%</b>	<b>29,800.41</b>	<b>30.77%</b>	<b>4,725.70</b>	<b>4.88%</b>	<b>47,645.90</b>	<b>49.19%</b>
Urban	1,319.00	1.36%	4,880.00	5.04%	1,458.47	1.51%	7,657.47	7.91%
Rural	8,488.54	8.76%	24,924.17	25.73%	8,142.20	8.41%	41,554.91	42.90%
<b><u>Collectors</u></b>	<b>9,807.54</b>	<b>10.13%</b>	<b>29,804.17</b>	<b>30.77%</b>	<b>9,600.67</b>	<b>9.91%</b>	<b>49,212.38</b>	<b>50.81%</b>
<b><u>TOTAL</u></b>	<b>22,927.33</b>	<b>23.67%</b>	<b>59,604.58</b>	<b>61.54%</b>	<b>14,326.37</b>	<b>14.79%</b>	<b>96,858.28</b>	<b>100.00%</b>